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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,328	08/28/2003	Amy H. Kang	5681-69401	7788

35690 7590 04/30/2007 MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398	EXAMINER
	WANG, RONGFA PHILIP

ART UNIT	PAPER NUMBER
2191	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/651,328	KANG ET AL.
	Examiner	Art Unit	
	Philip Wang	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 March 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-12,31-39,42-44,46-51,54-56 and 58-62* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-12,31-39,42-44,46-51,54-56 and 58-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

     1.☐ Certified copies of the priority documents have been received.

     2.☐ Certified copies of the priority documents have been received in Application No. _____.

     3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to amendment filed on 3/8/2007.

2.   The 35 USC § 101 rejections of claims 20-25, 39-46, 47-50, 51-58, and 59-62 are withdrawn in view of the Applicant's amendment to the claims.

3.   The 35 USC § 112 rejections of claims 36-38 are withdrawn in view of the Applicant's amendment to the claims.

4.   The 35 USC § 103 rejections of claims 26-38 are withdrawn in view of the Applicant's cancellation of the claims.

5.   The objection to claim 9 is withdrawn in view of the applicant's amendment to the claim.

6.   Per Applicant's request, claims 2-3, 13-30, 40-41, 45, 52-53, and 57 have been canceled; and claims 1, 4, 7, 8, 9-11, 31, 32, 34, 36, 37, 39, 44, 46-48, 51, 54-56, and 58-62 have been amended.

7.   Claims 1, 4-12, 31-39, 42-44, 46-51, 54-56, and 58-62 remain pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

u-12, 31-31, 42-44, 46-51, 54-56, 58-62

1.   Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Error

Handling Interface (H5E)" (herein H5E) in view of Lowen et al. (US Patent No.

7,017,077).

As per claim 1,

H5E discloses

- a memory comprising program instructions, wherein the program

  instructions are executable by the processor to implement an error trace

  mechanism for a threaded program configured to (H5E, p. 1,

  Introduction, "...within the HDF5 library...application-

  called API function..."; "Example: An Error Message",

  see error message "HDF5-DIAG: Error detected in thread

  0, this shows support for the single threaded

  program.):

- in the thread of the threaded program, for each error generated by one or

  more functions executed in the thread, store an error trace element in a

  memory storage area specific to the thread in accordance with an

  application programming interface (API) to the error trace mechanism (p.

  1, below example, "The error stack can also be

  manipulated by these functions..." Since there is only

  one thread in this case, errors recorded are specific

  to the thread); and

- obtain an error trace for the threaded program in accordance with the API

to the error trace mechanism (H5E, p. 1, 2. Error Handling

Operations, 2nd para., "The error stack can also be

printed..."; p. 3, see herr_t H5Ewalk());

- wherein an error trace includes one or more error trace elements specific

to the corresponding thread, wherein each error trace element includes

information describing a particular error generated during execution of the

corresponding thread (H5E, p. 1, Example:An Error Message,

where it shows multiple trace elements, "#000: H5T.c

line 462").

H5E does not specifically disclose

- multithreaded program extension of the above limitation.

However, Lowen et al. disclose

- error retention for multithreaded program (c1: c1: 40-41,

"...provides a method for error detection of multi-

threaded application software. C2:56-c3:48 describes

how a logger can be instantiated for each thread

[c3:7-8, "The application thread may obtain an

instance of the logger..."], and errors generated by

one or more functions executed in the thread can be

stored on error trace element in a memory storage area

specific to the thread, [c3:46-48, "...by instantiating

a log message queue…"]. Therefore, for each thread

there is a corresponding logger with a corresponding

instance of message queue to store error trace element

and the message queue is a memory storage area

specific to the thread.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the teachings of Lowen et al. into the teachings

of H5E to include multithreaded support. The modification would be obvious to one of

ordinary skill in the art to want to improve retention of error information in a

multithreaded application as suggested by Lowen et al. (see Background of

Invention).

As per claim 4,

the rejection claim 1 is incorporated;

H5E discloses

- the error trace further includes a field indicating a count of the error trace

    elements in the error trace (p. 3, under herr_t H5Ewalk "The

    error stack…"; and under typedef herr_t, "…n is

    sequence number…").

As per claim 5,

the rejection claim 1 is incorporated;

H5E discloses

- wherein each error trace element indicates one or more of a location

   where the particular error of the error trace element occurred, an error

   type of the particular error, and what the particular error is (p. 1,

   Example: An Error Message).

As per claim 6,

the rejection claim 5 is incorporated;

H5E discloses

- wherein the location of the particular error includes one or more of a

   function name, a source file name, and a line number where the particular

   error occurred (p. 1, Example: An Error Message).

As per claim 7,

the rejection claim 1 is incorporated;

H5E discloses

- wherein the program is further configured to determine from each error

   trace element one or more of a location where the particular error of the

   error trace element occurred, an error type of the particular error, and

   what the particular error is (p. 1, Example: An Error Message).

As per claim 8,

the rejection claim 1 is incorporated;

H5E discloses

- wherein the error trace mechanism is a C/C++ interface library (p. 1,

  Example: An Error Message).

As per claim 9,

- see reason of rejection of claim 1.

As per claim 10,

the rejection claim 9 is incorporated;

- the called library function is configured to call one or more other library

  functions in a function call stack, wherein each of the one or more other

  library functions is configured to, if the library function generates an error,

  add an error trace element to an error trace in a memory storage area

  specific to a thread corresponding to the function call stack (see 1.

  Introduction).

As per claims 11-12,

the rejection of claim 9 is incorporated and further

- claims 11-12 recite the same limitation of claims 7 and 8 respectively and

  are rejected for the same reason set forth in the rejection of claims 7 and

  8 respectively.

As per claim 31,

    -   See reason of rejection of claim 1.

As per claim 32,

the rejection of claim 31 is incorporated and further

    -   Refer to rejection of claim 10.

As per claim 33,

the rejection of claim 32 is incorporated and further

    -   Refer to rejection of claim 6.

As per claim 34,

the rejection of claim 31 is incorporated and further

    -   Refer to rejection of claim 7.

As per claim 35,

the rejection of claim 31 is incorporated and further

    -   Refer to rejection of claim 8.

As per claim 36,

H5E discloses a system, comprising:

- means for a plurality of functions in a function call stack to generate

  information describing one or more errors generated by the plurality of

  functions (See 1. Introduction);

- means to obtain the generated information (H5E, p. 1, 2. Error

  Handling Operations, 2nd para., "The error stack can

  also be printed..."; p. 3, see herr_t H5Ewalk());

- and means to determine from the obtained information one or more of a

  location where each error occurred, an error type of each error, and what

  the each error is (H5E, p. 1, Example: An Error Message,

  where it shows multiple trace elements, "#000: H5T.c

  line 462").

H5E does not specifically disclose

- multithreaded program extension of the above limitation.

However, Lowen et al. disclose

- error retention for multithreaded program (c1: c1: 40-41,

  "...provides a method for error detection of multi-

  threaded application software. C2:56-c3:48 describes

  how a logger can be instantiated for each thread

  [c3:7-8, "The application thread may obtain an

  instance of the logger..."], and errors generated by

  one or more functions executed in the thread can be

stored on error trace element in a memory storage area

specific to the thread, [c3:46-48, "...by instantiating

a log message queue..."]. Therefore, for each thread

there is a corresponding logger with a corresponding

instance of message queue to store error trace element

and the message queue is a memory storage area

specific to the thread.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to incorporate the teachings of Lowen et al. into the teachings

of H5E to include multithreaded support. The modification would be obvious to one of

ordinary skill in the art to want to improve retention of error information in a

multithreaded application as suggested by Lowen et al. (see Background of

Invention).

As per claim 37,

the rejection claim 36 is incorporated;

H5E discloses

- wherein the plurality of functions are functions of a library, further

    comprising means to call the plurality of functions in the function call stack

    from a program (p. 1. Introduction).

Lowen et al. disclose

- error retention for multithreaded program (c1: c1: 40-41, "...provides

    a method for error detection of multi-threaded

    application software.)

As per claim 38,

the rejection claim 37 is incorporated;

H5E discloses

- wherein the library is a C/C++ interface library (p. 1, Example: An

    Error Message).

As per claim 39,

- See reason of rejection of claim 1.

As per claim 42,

the rejection claim 39 is incorporated;

H5E discloses

- wherein each error trace element indicates one or more of a location

    where the particular error of the error trace element occurred, an error

    type of the particular error, and what the particular error is (p. 1,

    Example: An Error Message).

As per claim 43,

the rejection claim 42 is incorporated;

H5E discloses

- wherein the location of the particular error includes one or more of a function name, a source file name, and a line number where the particular error occurred (p. 1, Example: An Error Message).

As per claim 44,

the rejection claim 39 is incorporated;

H5E discloses

- further comprising determining from each error trace element one or more of a location where the particular error of the error trace element occurred, an error type of the particular error, and what the particular error is (p. 1, Example: An Error Message).

As per claim 46,

the rejection claim 39 is incorporated;

H5E discloses

- wherein the error trace mechanism is a C/C++ interface library (p. 1, Example: An Error Message).

As per claim 47,

    - See reason of rejection of claim 1.

As per claims 48-50,

the rejection of claim 47 is incorporated and further

    - claims 48-50 recite the same limitation of claims 10, 7, and 8 respectively

      and are rejected for the same reason set forth in the rejection of claims 10,

      7 and 8 respectively.

As per claim 51,

    - it is the computer-accessible medium claim corresponding to method

      claim 39 and is rejected for the same reason set forth in connection of the

      rejection of claim 39 above.

As per claim 54,

the rejection claim 51 is incorporated;

H5E discloses

    - wherein each error trace element indicates one or more of a location

      where the particular error of the error trace element occurred, an error

      type of the particular error, and what the particular error is (p. 1,

      Example, An Error Message).

As per claim 55,

the rejection claim 54 is incorporated;

H5E discloses

- wherein the location of the particular error includes one or more of a

    function name, a source file name, and a line number where the particular

    error occurred (p. 1, Example, An Error Message).

As per claim 56,

the rejection claim 51 is incorporated;

H5E discloses

- wherein the program instructions are further computer-executable to

    implement determining from each error trace element one or more of a

    location where the particular error of the error trace element occurred, an

    error type of the particular error, and what the particular error is (p. 1,

    Example, An Error Message).

As per claim 58,

the rejection claim 51 is incorporated;

H5E discloses

- the library is a C/C++ interface library (p. 1, Example, An Error

  Message).

As per claim 59,

- it is the computer-accessible medium claim corresponding to method

  claim 47 and is rejected for the same reason set forth in connection of the

  rejection of claim 47 above.

As per claims 60-62,

- they are the computer-accessible medium claims corresponding to

  method claims 48-50 respectively and are rejected for the same reason

  set forth in connection of the rejection of claims 48-50 above respectively.

Response to Arguments

2.   Applicant's arguments with respect to claims 1, 4-12, 31-39, 42-44, 46-51, 54-56,

and 58-62 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
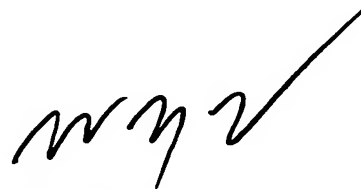
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Wang whose telephone number is 571-272-5934. The examiner can normally be reached on Mon - Fri 8:00 - 4:00PM. Any inquiry of general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

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WEI ZHEN
SUPERVISORY PATENT EXAMINER